

WERRIBEE SECONDARY COLLEGE



YEAR 7 MATHEMATICS SEMESTER 1 SYLLABUS OUTLINE

Reference(s) Textbook: NELSON MATHS for the CSF II

Topics: Number Skills, Decimals, Data Handling

Syllabus Outline: Number Skills

Week	Curriculum Focus	Activities	Reference	Assessment Tasks	VELS
1 & 2	<ul style="list-style-type: none"> • Revision of Whole Number Operations • Mental Arithmetic (continue during Term) 	<ul style="list-style-type: none"> • Cross number Puzzle 2 (1.2) • Worksheets 			Strand- Discipline Based Learning Domain – Mathematics Dimension –Number (Level 5) Students carry out arithmetic computations involving natural numbers, using mental and/or written algorithms with one- and two-digit divisors in the case of division. They use calculators for arithmetic
3	<ul style="list-style-type: none"> • Place Value • Order of Operations • Calculator Totals 	<ul style="list-style-type: none"> • Order of operations Worksheet (4.2) • Four 4's Problem (NELSON Pg.92) 	Nelson Ex. 4.1 Nelson Ex. 4.2 Nelson Ex. 4.4	NU 7.1 – Whole Number (Level 3 & 4 –all questions, Level 5 – questions 1 - 6)	

4 & 5	<ul style="list-style-type: none"> • Estimation • Number Lines • Number Planes 	<ul style="list-style-type: none"> • Dot to Dot Sailing (4.2) 	<p>Nelson Ex. 4.5 Nelson Ex. 4.3 Q.1</p> <p>Nelson Chap 4 Review Q.3 - 6</p>	<ul style="list-style-type: none"> • <i>Revision assignment</i> • <i>Number Skills Test</i> <p>Number Planes Assignment This assignment needs to be partially completed at home. It is suggested that some time (2- 3 periods) be allocated to an explanation of this task and students allowed some time to commence this assignment in class.</p>	<p>computations involving several operations on natural numbers. They use a range of strategies for approximating the results of computations, such as front-end estimation, rounding, and seeking nearby numbers which are multiples of the divisor when doing division. They use calculators for arithmetic computations involving several operations on natural or rational numbers of any size.</p> <p>Dimension –Space (Level 5) Students use coordinates and quadrants to identify positions and directions in the plane, and interpret and use lines, grids, contours, isobars, scales and bearings to specify location and direction on plans and maps.</p> <p>Strand- Interdisciplinary Learning Domain – Communication Dimension –Listening, Viewing and responding (Level 5) They interpret complex information and evaluate the effectiveness of its presentation. When responding, they use specialised language and symbols as appropriate to the curriculum. They consider their own and others' points of view, apply prior knowledge to new situations, challenge assumptions and justify their own interpretations.</p> <p>Dimension –Presenting (Level 5) students use the communication conventions, forms and language appropriate to the subject to convey a clear message across a range of presentation formats to meet the needs of the context, purpose and audience.</p>
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Syllabus Outline: Number Patterns

Week	Curriculum Focus	Activities	Reference	Assessment Tasks	VELS
6 & 7	<ul style="list-style-type: none"> • Multiples • Lowest Common Multiples • Factors • Highest Common Factor • Tests for Divisibility 	<ul style="list-style-type: none"> • Patterns of Multiples Worksheet 	Nelson Ex. 4.6 Q.1 - 12 Nelson Ex. 4.6 Q.13 - 15 Nelson Ex. 4.7 Q.1 - 5 Nelson Ex. 4.7 Q.6 - 8 Nelson Ex. 4.10		Strand- Discipline Based Learning Domain – Mathematics Dimension –Number (Level 5) Students can identify complete factor sets for large natural numbers and express these natural numbers as products of powers of primes. They evaluate natural numbers given in base-exponent form, for example, $5^4 = 625$ find rational square roots of rational numbers that are perfect squares.
8	<ul style="list-style-type: none"> • Prime and Composite Numbers • Factor Trees 	<ul style="list-style-type: none"> • Investigation - Looking for Prime Numbers(NELSON Pg.108) • <i>Factopillars</i> Worksheet 	Nelson Ex. 4.8 Q.1 Nelson Ex. 4.8 Q.2	NU 7.1 – Whole Number (complete Level 5 questions)	
9 & 10	<ul style="list-style-type: none"> • Special number Patterns – Odds, Evens and Squares • Index Notation including squares and square roots. 	<ul style="list-style-type: none"> • 	Nelson Ex. 4.9 Nelson Ex. 4.11 Nelson Chap 4 Review Q.7 - 10	NU 7.2 – Factors and Multiples NU 7.3 – Factors, Squares and Square Roots <ul style="list-style-type: none"> • Revision assignment • Number Patterns Test 	

Syllabus Outline: Decimals

Week	Curriculum Focus	Activities	Reference	Assessment Tasks	VELS
11 – 12	<ul style="list-style-type: none"> •Place Value •Expanded Notation •Position on Number Line •Comparison of decimals 	<i>Problem Solving:</i> Place Value Problems (NELSON Pg.124)	Nelson Ex. 5.2 Q.1 - 5 Nelson Ex. 5.2 Q.6 Nelson Ex. 5.2 Q.8 - 9 Nelson Ex. 5.2 Q.7, 10 -12	* <i>Application Task</i> - BACKPACKER'S HOLIDAY	Strand- Interdisciplinary Learning Domain – Communication Dimension – ICT for creating (Level 5) Students independently apply a range of processing skills, functions and equipment to solve problems and create products which contain minimal functional, typographical, formatting and readability errors. Strand- Discipline Based Learning Domain – Mathematics Dimension –Working Mathematically (Level 5) They use technology (a spreadsheet), to investigate relations for simple algebraic expressions. Dimension –Number (Level 5) They know the decimal equivalents for simple fractions and use these to give decimal equivalents for rational numbers. They express rational numbers as fractions and decimals (finite and infinite recurring) and are adept at ordering rational numbers expressed in decimal form. Students carry out arithmetic computations involving finite decimals using mental and/or written algorithms with one- and two-digit divisors in the case of division. They use calculators for arithmetic computations involving several operations on rational numbers of any size.
12	<ul style="list-style-type: none"> •Fractions as Decimals •Rounding Decimals 		Nelson Ex. 5.3 Nelson Ex. 5.4	<i>Worksheet 1</i>	
13 – 15	<ul style="list-style-type: none"> •Addition of Decimals •Subtraction of Decimals •Multiplication and Division by Powers and Multiples of Ten •Multiplication of Decimals •Division of Decimals <ul style="list-style-type: none"> (i) by Whole Numbers (ii) by Decimals •Recurring Decimals 	<i>Problem Solving:</i> Contents of Envelopes (NELSON Pg.133) Puzzle Sheet?	Worksheet Worksheet Nelson Ex. 5.5 Nelson Ex. 5.6 Nelson Ex. 5.7 Worksheet Nelson Ex. 5.8 Nelson Ex. 5.9 Nelson Ex. 5.10 Nelson Ex. 5.11 Nelson Chap 5 Review (select carefully)	NU 7.4 – Decimals <i>Worksheet 2</i> Worksheet 3 NU 7.5 – Fractions and Decimals <ul style="list-style-type: none"> • <i>Revision assignment</i> • <i>Decimals Test</i> 	

* **Application Task - BACKPACKER'S HOLIDAY**

CAN BE DONE AT ANYTIME during Term 2..

This requires 2 or 3 lessons of introduction and preparation time and 2 lessons in a computer room to enter information to a prepared spreadsheet.

Syllabus Outline: Data Handling

Week	Curriculum Focus	Activities	Reference	Assessment Tasks	VELS
16 - 18	Drawing and Interpreting Graphs <ul style="list-style-type: none"> Interpreting Data: Tables Picture graphs <ul style="list-style-type: none"> (i) Interpreting (ii) Drawing Interpreting Data: Bar and Column Graphs Interpreting Data: Line Graphs Drawing Column and Line Graphs Interpreting Pie Graphs 		Nelson Ex. 9.2 Worksheet Worksheet Nelson Ex. 9.4 Worksheet Nelson Ex. 9.5 Worksheet Nelson Ex. 9.3 Nelson Chap 9 Review Q.5-8	Application Task (Turning The Tide assignment) - <i>Dangerous Driving</i> CD 7.1 – Interpreting Data <i>Interpreting and Drawing Graphs Test</i>	Strand- Discipline Based Learning Domain – Mathematics Dimension –Chance and Data (Level 5) Students organise and present discrete (grouped and ungrouped) and continuous data, using by-hand approaches for small data sets and technology for larger data sets, to represent uni-variate data in dot plots, stem and leaf plots, bar charts and histograms as applicable. They calculate summary statistics that describe measures of centre (mean, median, mode) and spread (range), and make simple inferences based on this data. Dimension –Working Mathematically (Level 5) They use technology (a spreadsheet), to investigate relations for simple algebraic expressions.
19 – 20	Summarising Data <ul style="list-style-type: none"> Mean Stem and leaf Plots Dot Plots 	<i>Problem Solving:</i> Edible Maths (NELSON Pg.321-322) Application Task – Using Averages.	Nelson Ex. 9.6 Nelson Ex. 9.7 Nelson Ex. 9.8 Nelson Chap 9 Review Q.9, 11-13	CD 7.3 – Presenting Data 1 (teacher will need to explain tally column in Level 3 Q.2 and common denominator in Level 5 Q.6-10.) CD 7.2 – Frequency Table and Graphs CD 7.4 – Presenting Data 2 CD 7.5 – Histograms (optional) <ul style="list-style-type: none"> <i>Revision assignment</i> <i>Handling Data Test</i> 	Strand- Interdisciplinary Learning Domain – Communication Dimension – ICT for creating (Level 5) Students independently apply a range of processing skills, functions and equipment to solve problems and create products which contain minimal functional, typographical, formatting and readability errors.